Model 485SD9R
Port-Powered RS-485 Converter

CE

The 485SD9R is a port-powered two-channel RS-232 to RS-485 converter. It converts TD and RD RS-232 lines to balanced half-duplex RS-485 signals. The unit is powered from the RS-232 data and handshake lines whether the lines are high or low. The 485SD9R has DB-9 female connectors on both the RS-232 side and the RS-485 side.

RS-232 Side:

Connector:	DB-9 female
Signals:	Passes through pins 3 (TD) and 2 (RD) Pins 7 (RTS) and 8 (CTS) are tied together Pins 4 (DTR), 6 (DSR), and 1 (CD) are tied together

RS-485 Side:

Connector:	DB-9 female
Signals:	2 wire, half-duplex operation only Automatic control circuit enables driver only when transmitting Receiver is disabled when transmitting to prevent echo back to RS-232 device

Data Rates:	Up to 115.2 k baud
Distance:	Depending on power from port; will transmit up to 4000 feet at 19,200 baud
Dimensions:	2.50 x 1.30 x .80 in
Power Requirements:	No external power is required if two RS-232 output handshake lines are available. If the handshake lines are raised and no termination is used, the power efficiency is greatly increased. Less than 3mA is required to operate the 485SD9R plus the load current. ***NOTE: Connecting an external power supply to the handshake lines may damage the unit. Contact technical support for more information on connecting an external power supply to the handshake lines.***

Operation

Although the 485SD9R uses handshake lines to power the converter, no handshaking is required to control the RS-485 driver. The RS-485 driver is automatically enabled during each spacing state on the RS-232 side. During the marking or idle state, the RS-485 driver is disabled and the data lines are held in the marking state by the 4.7K ohm pull-up and pull-down resistors. The value of these resistors may need to be changed to a different value when termination is used in order to maintain the proper DC bias during the idle state. See B&B Electronics' free RS-422/RS-485 Application Note for more information on termination and DC biasing of an RS-485 network.

Some users may see an echoed character string on their RS-232 side. This is due to the low power operation of the DS1275 chip. The DS1275 uses the lesser value of ground or negative input voltage into the receiver for the driver's negative rail. When transmitting into this device, its RS-232 output may swing between the negative input and ground as the receiver input voltage goes negative and positive. Therefore, if your receiver interprets ground as a space or high level, you may see an echoed character string on the RS-232 side. If this is not acceptable for your application, you may want to choose one of our externally powered units similar to the 485PTBR.

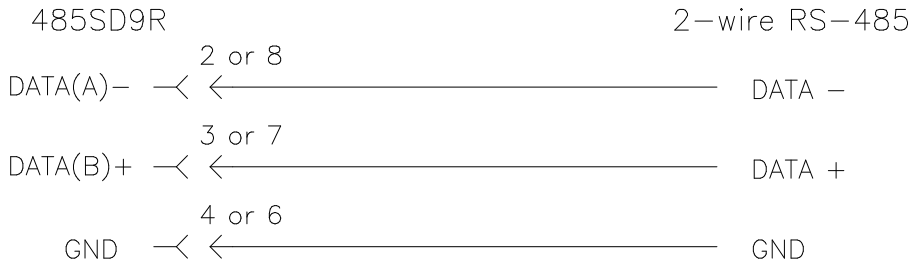

Figure 1

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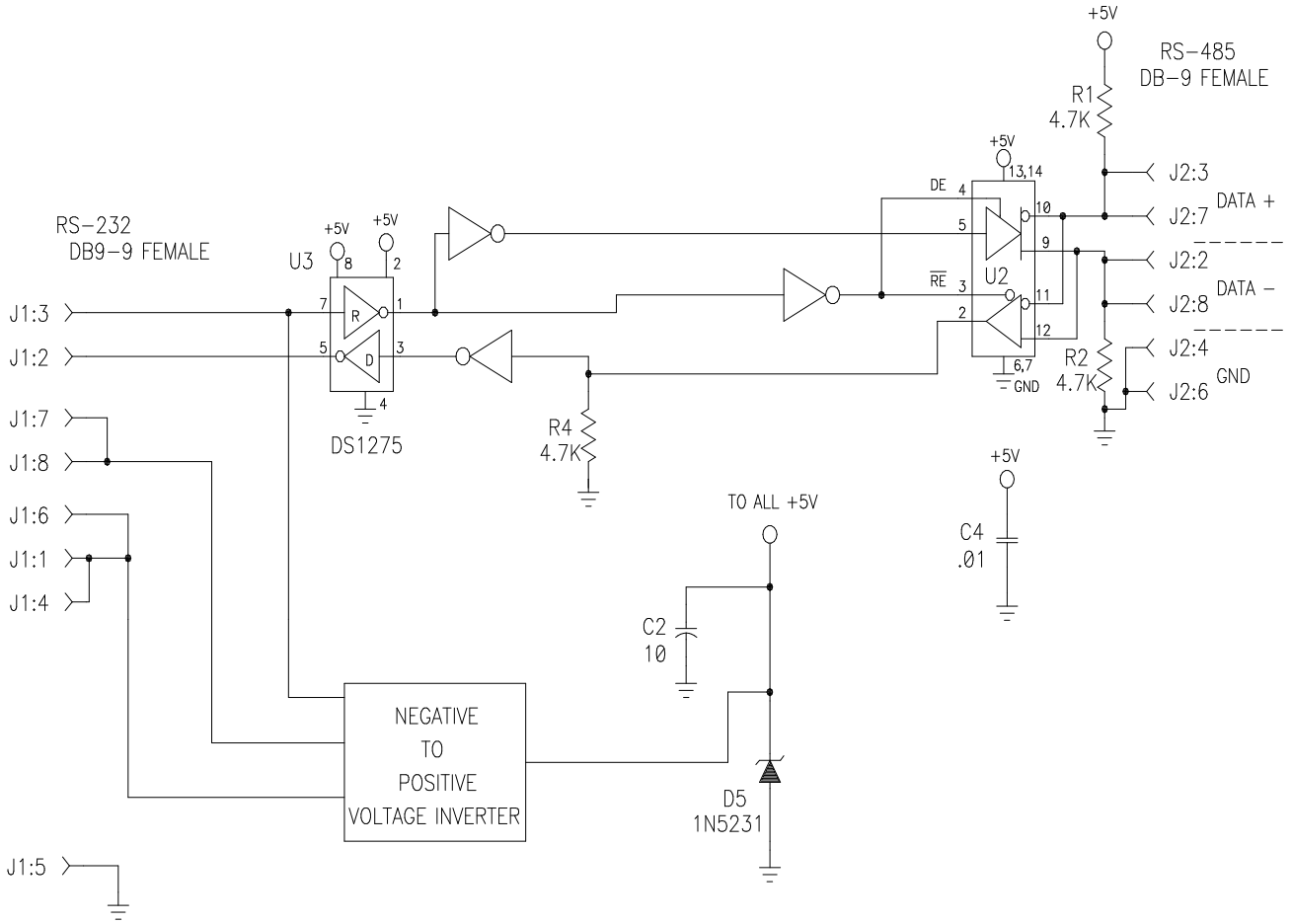
Table 1 – 485SD9R Pin Outs	
Signal	**DB-9S Pin #**
Data A (-)	2 or 8
Data B (+)	3 or 7
Signal Ground	4 or 6



DECLARATION OF CONFORMITY

Manufacturer's Name:	B&B Electronics Manufacturing Company
Manufacturer's Address:	P.O. Box 1040 707 Dayton Road Ottawa, IL 61350 USA
Model Numbers:	485SD9R
Description:	Port-powered RS-232 to RS-485 Data Converter
Type:	Light industrial ITE equipment
Application of Council Directive:	89/336/EEC
Standards:	EN 55022 EN 61000-6-1 EN 61000 (-4-2, -4-3, -4-4, -4-5, -4-6, -4-8, -4-11)

Robert M. Paratore, Director of Engineering

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